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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,986	12/07/2006	Ertugrul Arpac	P30321	2453
7055 7590 11/15/2010 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER CHEN, VIVIAN	
			ART UNIT 1787	PAPER NUMBER
			NOTIFICATION DATE 11/15/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/589,986	<b>Applicant(s)</b> ARPAC ET AL.	
	<b>Examiner</b> Vivian Chen	<b>Art Unit</b> 1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2010 and 31 August 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 52-84 is/are pending in the application.
- 4a) Of the above claim(s) 65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 52-64 and 66-84 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

1. Claims 1-51 have been cancelled by Applicant.

### ***Response to Election/Restrictions***

1. Applicant's election of Species (i) in the reply filed on 8/31/2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claim 65 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/31/2010.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 52-64, 66-84 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In the claims (e.g., 52, 70, 75-76, 81-82, etc.), the term "low-energy surface" is a relative term which renders the claim indefinite. The term "low-energy" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 52-64, 66-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

JP 04-292677 (JP '677),

in view of ANDERSON ET AL (US 6,387,519).

JP '677 discloses a curable coating composition comprising a polymer binder derived from polyester polyols in amounts of 10-80 wt% and isocyanate compounds in amounts of 2-50 wt%, a functionalized fluoropolymer (e.g., copolymers comprising tetrafluoroethylene and fluorovinyl ethers, etc) with functional groups (e.g., carboxyl groups, hydroxyl groups, etc.) in amounts of 2-80 wt%, inorganic particles (e.g., oxides of silicon, titanium, aluminum, etc.) in amounts of 5-60 wt%, and solvent. Articles coated with said coating composition are formed by applying said coating composition to a substrate (e.g., structures, etc.) by shaping the coating composition into a layer, followed by curing said composition to form a durable, stainproof,

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abrasion resistant coating. (entire document, e.g., paragraphs 1-4, 7-8, 13-14, 17, 19-20, 25-26, 27, etc.) However, the reference does not explicitly disclose the recited inorganic particles.

ANDERSON ET AL '519 discloses that it is well known in the art to incorporate ceramic particles (e.g., oxides of silicon, titanium, aluminum, etc.) having a typical diameter of 0.001-50 microns in amounts of 0.01-75 wt% in polymer-based (e.g., polyurethane, etc.) coating systems in order to provide enhanced adhesion and abrasion resistance. The reference also discloses that it is well known in the art to surface modify the particles with organic groups to improve compatibility with the resin binder. The reference also discloses that polyurethane binders are derived from the reaction of polyols and polyisocyanate compounds. The reference also discloses that it is well known in the art to utilize polyamines (e.g., aromatic diamine, etc) as curing agents for isocyanate-functional resins. (line 65, col. 7 to line 3, col. 8; line 63, col. 9 to line 59, col. 10; line 63, col. 13 to line 5, col. 14; line 58, col. 14 to line 6, col. 15; line 52, col. 28 to line 5, col. 29; line 7-30, col. 31; line 12-28, col. 35; line 31-48, col. 46; etc.)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate effective amounts of known surface modified inorganic filler particles as disclosed in ANDERSON ET AL '519 in the coating compositions of JP '677 in order to improve adhesion to substrates and to provide increased hardness and abrasion resistance. It also would have been obvious to incorporate known curing agents for polyurethane-based binders (claims 67-68) as disclosed in ANDERSON ET AL '519 into the coatings of JP '677 in order to improve durability and abrasion resistance. One of ordinary skill in the art would have selected the type of surface modification (e.g., type of functional and/or reactive groups, etc.) (claims 61, 74, 75) on the particle surfaces based on the specific binder resin used to

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improve compatibility and bonding between the particles and the resins. One of ordinary skill in the art would have selected the type and amount of particles, binder, and fluoropolymer in order to obtain the specific abrasion resistance and surface characteristics (claims 79-82) for specific applications. It would have been obvious to utilize the coatings of JP '677 in conventional protective and stain-resisting applications (e.g., for structures, etc.) (claim 84) where durable, stain resistant curable based coatings are typically used. Since it is well known in the art (as illustrated in ANDERSON ET AL '519) that hydroxyl and/or carboxyl groups and/or isocyanate groups are capable of reacting with each other, the Examiner has reason to believe that the functional groups of the functionalized fluoropolymer of JP '677 are capable of chemically reacting with the reactive functional groups in the polyol and isocyanate components of the polymer binder to at least some degree to form a curable or cured coating layer, therefore the Examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald et al.*, 205 USPQ 594.

5. Claims 61, 74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

JP 04-292677 (JP '677), in view of ANDERSON ET AL (US 6,387,519),

as applied to claim 52, 70 above,

and further in view of KAYANOKI (US 6,703,131).

KAYANOKI discloses that it is well known in the art to surface treat inorganic oxide particles used as fillers in urethane-based coating compositions with amine-based compounds in order to improve uniform dispersibility and to avoid undesirable agglomeration of particles.

(line 13-15, col. 4; line 19-42, col. 5)

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to surface modify the inorganic particles of JP '677 with known reactive functional groups as disclosed in KAYANOKI order to improve compatibility between the particles and the resins, as well as to prevent particle settling and agglomeration which would result in a non-uniform or defective surface.

***Response to Arguments***

6. Applicant's arguments filed 5/25/2010 and 8/31/2010 have been fully considered but they are not persuasive.

(A) Applicant argues that the term "low-energy surface" is not vague and indefinite. However, while the specification indicates a generally preferred range of surface energy values, the term "low" in the phrase "low-energy surface" remains a relative term because the disclosure as originally filed does not clearly define the term "low-energy surface" as having a specific range of values.

(B) Applicant's arguments with respect to BROTHERS ET AL and RAU ET AL and YAMAYA ET AL and NASS ET AL have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho, can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 5, 2010

/Vivian Chen/

Primary Examiner, Art Unit 1787